

### REMARKS

The Examiner's careful consideration of the application is sincerely appreciated.

Claim 16 has been canceled, and claim 18 has been added. The new claim is supported by the original specification and does not include new subject matter..

Claims 13-17 have been rejected under 35 U.S.C. §103 as being unpatentable over the admitted prior art in view of U.S. Patent 5,768,306 (Sawahashi et al). For at least the following remarks, favorable reconsideration of this case is respectfully requested.

In the Office Action under response to arguments section, a detailed analysis is provided regarding the Examiner's rejection. It is respectfully requested the Examiner consider the below arguments and the applicant's points in comparison to the analysis of the Office Action.

In particular, in the Office Action under reply, the Examiner states that described in the background of the instant application and illustrated in Fig. 1 is the technology for "performing both the first and second correlations (1001 and 1005) with respect to the same received signal." Respectfully, applicant's submit the below arguments in disagreement.

Please consider the below points with regard to the prior art and in particular the disadvantages of the prior art, as described on pages 5 through 11 in the instant application, and compared to the claimed invention in overcoming those disadvantages.

According to the instant specification with reference to the background of the invention, the prior art detection device, as illustrated in Fig. 1, initially obtains a synchronization (sync) timing signal. Then, a base station code is determined on the basis of the obtained timing signal.

It is respectfully submitted that a base station code is determined from a different signal than the sync timing signal. In other words, according to the prior art, one received signal is used to extract a sync timing signal, and a temporally ensuing different signal is used to

determine a base station code. Clearly, the same received signal cannot be used to extract a sync timing signal and to determine a base station code, in accordance with the prior art detection device of Fig. 1.

More specifically, referring to the present invention specification (see page 8, line 18 – page 9, line 11), a prior art detection device is described for acquiring a synchronization timing signal by a matched filter 1001 and subsequently sending the timing signal to code generation circuits 1006-1, 1006-2 and 1006-3 to have them issue base station codes using the timing based on the acquired synchronization timing signal and obtaining a correlation using a sliding correlation determining unit.

Further described in the background section of the specification is that those correlation determinations using the sliding correlation determining units 1005-1, 1005-2 and 1005-3 are performed after completing a correlation determination of a type performed using a matched filter to extract a synchronization timing signal. In a temporal sequence of events, the timing signal is obtained from a received signal, and then base station code correlations are obtained using a later received signal.

This is so because nothing is known about the timing to synchronize to when a matched filter is used for performing the correlation determination of the first type. Therefore and according to the prior art, since synchronization timing is not established, it is impossible to use the sliding correlation determining units 1005-1, 1005-2 and 1005-3 and perform an associated second type of correlation determinations during the period in which the correlation determination of the first type performed using the matched filter is in progress.

It is apparent from the above analysis of the prior art that a correlation determination of the second type performed using a sliding correlation determining unit is carried out with respect

to a newly received signal (a different, newly received signal) and, therefore, with respect to a different signal than the signal for which a first type correlation determination having been performed using a matched filter after completing a correlation determination of the type performed using a matched filter.

As described in the background as a disadvantage of the prior art: what happens in the prior art detection device of Fig. 1 if this newly received signal has a low amplitude due to fading (the mobile station moves and the strength of the signal changes)? In this case, a correlation value obtained on a base station code at a synchronized timing signal may actually be lower than a correlation value obtained at unsynchronized timing (see pages 18-19 of the specification). Hence, a false code is detected in the prior art, which is a problematic disadvantage of the prior art detection device of Fig. 1, summarized herein for the Examiner's convenience. The Examiner is further invited to refer to the Applicant's invention for the solution to that prior art problem of false detection codes.

According to the Applicant's invention as recited in the claims, the same received signal, as stored in a storage unit, is used for both the first correlation determination (sync timing signal) and the second correlation determination (base station code). Hence, according to the presently claimed invention, the signal fading does not affect the correlation determination in contrast to the prior art detection device.

Continuing with the Examiner's obviousness rejections based on section 103, it is respectfully submitted that Sawahashi fails to cure the above deficiencies of the prior art detection device of Fig. 1.

As discussed above, the prior art detection device of Fig. 1 is directed to a technology in which neither the first correlation determination (sync timing signal) nor the second correlation

determination (base station code) performed for a received signal is associated with a signal or a portion of the received signal that has been stored in a storage unit. According to the prior art detection device of Fig. 1, the first correlation determination is to determine correlation between common spreading codes and a received signal by shifting the timing of one relative to that of the other, and then determining the second correlation between them at the relative timings that are selected based on results of the first correlation determination. The Examiner concedes that the prior art detection device of Fig. 1 is deficient in disclosing the claimed feature of the present invention. It is respectfully submitted, however, that Sawahashi should not be relied upon to supplement the prior art teaching.

It is respectfully submitted that Sawahashi is concerned with determining only the first correlations (sync timing signal). In other words, Sawahashi discloses a sliding correlator for establishing initial synchronization with the received signal. In particular, a correlation is determined between each spreading code and a received signal by shifting relative timing between them. The received signal is stored into memory prior to performing this correlation determination according to Sawahashi.

Sawahashi teaches using a memory for the first correlation. In contrast to applicant, Sawahashi, does not teach or suggest any base station code detection.

In the proposed combination of references AAPA Fig. 1 and the technology of Sawahashi (the first correlation determination is made between a spreading code and a received signal by shifting relative timing between themselves), it results in no more than the technology of Sawahashi. In other words, by combining the prior art detection device of Fig. 1 and that of Sawahashi, the same problem of fading remains because the received signal or a portion of the received signal is not stored for use in the second type of correlation (base station code).

In the Office Action, the Examiner states that "it would have been obvious to one skilled in the art at the time the invention was made to provide a storage unit, a memory, for storing the received signal in the prior art receiver and a control unit to read the received signal from the memory to correlators (1001 and 1005), which allows repeated correlation of the received signal with varying phases of a spreading code for the purpose of establishing a faster initial synchronization as taught by Sawahashi et al." It is respectfully submitted that this is merely a general conclusory statement without any support in fact or law.

It is respectfully submitted that the Examiner failed to establish a prima facie case of obviousness. "For a prima facie case of obviousness to exist, there must be some objective teaching in the prior art or ... knowledge generally available to one of ordinary skill in the art [that] would lead that individual to combine the relevant teachings of the references." In re Fine, 837 F.2d 1071, 1074 (Fed. Cir. 1988). "The motivation, suggestion or teaching may come explicitly from 1) statements in the prior art, 2) the knowledge of one of ordinary skill in the art, or 3) in some cases the nature of the problem to be solved." In re Kotzab, 217 F.3d 1365, 1370 (Fed. Cir. 2000) (emphasis added).

Analyzing the current application in accordance with the Federal Circuit's roadmap as outlined above, it is believed that the Examiner turns to the prior art detection device of Fig. 1 and Sawahashi for explicit statements for motivation, suggestion or teaching to combine the references. The reason for the combination, however, has not been established with the required specificity. But even if combined, it does not result in the present invention as claimed in claims 13-15 and 17 of the present application.

It is submitted that the prior art detection device of Fig. 1 cannot provide such motivation, suggestion or teaching because it does not have any storage unit nor even suggest a

storage unit. Sawahashi, on the other hand, is directed to detection of a synchronization signal only. No mention of detection of base station codes is found in Sawahashi. It is not clear as to how the prior art detection device of Fig. 1 or Sawahashi can provide suggestion, motivation or teaching for each other, because their combination is cumulative and redundant. But even if combined, the combination would not result in the present invention: according to the combination of the prior art detection device of Fig. 1 and Sawahashi, the second correlation determination would still be subject to the fading effect because the newly acquired portion of the signal is used for this type of correlation, not the stored signal.

If the Examiner disagrees, he is respectfully requested to specifically point out column and line numbers for the statement that allegedly provides motivation, suggestion or teaching to a skilled artisan to combine the prior art device of Fig. 1 with Sawahashi.

With respect to claim 15 as currently amended, it is respectfully submitted that this claim contains features not found in the combination of the prior art detection device of Fig. 1 and Sawahashi. None of the prior art disclosures teaches a control unit using the received signal having been stored in the storage unit for performing the second correlation determination (base station code), in which the first correlation (sync timing signal) is performed by using the pre-assigned spreading code and the received signal that has not been stored in the storage unit. Analysis of those features will not be repeated here, but it is apparent that for the reasons stated above, claim 15 is similarly distinguishable over the prior art of record.

In light of the above, it is respectfully submitted that the prior art detection device of Fig. 1 and Sawahashi, alone or in combination, fail to teach or suggest all of the features of the present invention as recited in claims 13-15 and 17. Applicant's representative respectfully

requests withdrawal of the rejections of these claims. Favorable reconsideration of this case and early issuance of the Notice of Allowance are earnestly solicited.

New Claims


New claim 18 includes the storage unit storing at least a portion of the received signal, and the control unit using the same portion of the received signal having been stored in the storage unit for performing the first and second correlation determinations.

In the prior art the same portion of the received signal cannot be used to extract a sync timing signal and to determine a base station code, in accordance with the prior art detection device of Fig. 1. In a temporal sequence of events, the timing signal is obtained from a portion of the received signal, and then base station code correlations are obtained using a different portion of the received signal.

In view of the remarks set forth above, this application is in condition for allowance which action is respectfully requested. However, if for any reason the Examiner should consider this application not to be in condition for allowance, the Examiner is respectfully requested to telephone the undersigned attorney at the number listed below prior to issuing a further Action.

Any fee due with this paper may be charged to Deposit Account No. 50-1290.

Respectfully submitted,

  
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